merging in front of the shoulder with the upper lateral stripe in some cases, in other cases widening and suffusing the entire side of the throat and upper-arm region with a dusky mottling; skin of gular fan lavender-gray, the scales white or olive-yellow. The young have dark latero-ventral reticulations, and the throat usually has a series of dark longitudinal lines. In adult males the tail fin is large and its upper edge is indistinctly mottled with dark in the region of the rays. Limbs sometimes unmarked, sometimes with wide, irregular dark bars. Scales on limbs a little smaller than in *leucophaeus* proper; scales of tail a little larger.

Type.—U. S. Nat. Mus. Cat. No. 81346, an adult male from Mariguana Cay, taken July 18, 1930.

ZOOLOGY.—*Flagellate spermatozoa in a nematode* (Trilobus longus).[1]

B. G. Chitwood, The George Washington University. (Communicated by Paul Bartsch.)

The spermatozoa of nematodes are usually thought of as ameboid, *Ascaris* having been the example studied for years. Yet Professor

Figure 1. Anterior end of a single sperm; from a section stained with dahlia and eosin.

Figure 2. A testis of a male *Trilobus longus* showing the flagellate spermatozoa. ×415.

E. B. Wilson in 1925[2] says "In others such as those of *Ascaris*, the sperm may be regarded as a much shortened and thickened flagelliform cell with a relatively large amount of cytoplasm and a very short and non-vibratile tail." If his conception is correct, one would expect to find among the free-living nematodes forms in which the spermatozoa retain their tail and are capable of movement.

While examining collections from the beach sand at White Lake, North Carolina, attention was drawn to the rather obvious spermatozoa of *Trilobus longus*. They may be readily seen in living specimens of both male and female. The spermatozoa (Fig. 1) are approximately 60μ long. The head is blunt and expanding quickly posteriorly, and of oval outline in transverse section. The small nucleus is situated

[1] Received November 6, 1930.

[2] *The cell in development and heredity*, p. 298.

at the extreme anterior end of the head. The tail is long and tapering. From a casual observation of both living and sectioned testes (Fig. 2), I am inclined to believe that spermatogenesis is normal. Primary and secondary spermatocytes as well as spermatids are present.

When a living specimen is mashed and the spermatozoa liberated on the slide they move with a slow serpentine motion. Spermatozoa thus freed are short-lived, lasting at best only about three minutes. In the female the activity of the spermatozoa is best observed. When mature females are examined, these almost always contain a somewhat twisted ball-shaped mass of spermatozoa in a definite place in each uterus, the spermatheca. Here they may be seen slowly squirming over one another.

Probably many other nematodes have flagellate spermatozoa. *Trilobus longus* is described by Dr. N. A. Cobb in Ward and Whipple's *Fresh Water Biology*, a book available to most zoologists. The nematode is widespread, common on the sandy bottom of lakes and streams between the depths of six inches and two feet. The cytologist might find the spermatogenesis of *Trilobus* an interesting problem.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

PHILOSOPHICAL SOCIETY

1004TH MEETING

The 1004th meeting was held in the Cosmos Club Auditorium, March 15, 1930, President Lambert presiding.

Program: W. J. Rooney: *Earth-resistivity survey at Huancayo, Peru, and relation of resistivity to earth-current potential records.*—This survey, carried out near the Huancayo (Peru) Magnetic Observatory of the Department of Terrestrial Magnetism in the high Andes, is one of a series of earth-resistivity surveys made in connection with the study of earth-currents at observatories where potential gradient registration is in progress. The general resistivity of the region and its variation with position, depth, direction of current flow and rainfall, were determined. All may affect potential records and are indicative of the geological structure.

The resistivity of soil near the surface varied from over 100,000 to less than 2000 ohm-cm., depending on the character of the overburden. The mean values tended to converge to a value around 10,000 ohm-cm., as earth to depths of 200 to 300 meters was included in the measurements. These results are typical for an underlying structure of sedimentary rocks. A local area of high resistivity (values three times the mean for the region as a whole) was found near one earth-current line and explains the high-potential gradient records obtained from that line. The results were found to be independent of the orientation of the survey lines, indicating that the region is laterally isotropic. The seasonal variation was small and relatively unimportant. (*Author's abstract.*)